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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,090	03/23/2004	Bernard H. Kear	879.1.008	2534

7590 02/28/2006

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EXAMINER
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MILLER, DANIEL H

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/807,090	KEAR ET AL.	
	Examiner	Art Unit	
	Daniel Miller	1775	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 9-12,29,32,33 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,13-28,30,31,34-36 and 38-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/23/2004</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 9-12, 29, 32-33 and 37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on Dec. 27, 2005.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 13-14, and 38-50 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/15548.

4. Regarding claim 1, the reference teaches a composite material comprising carbon fullerenes particles (used as a binder) sintered and combined in a matrix of Graphite diamond, B, C, TiC, SiC or other ceramic composites (page 13 spec).

Regarding claim 2, the fullerenes the can be a mixture of SWNT's and C60 buckyballs (page 3 spec). Regarding claim 3, the fullerenes are extracted from soot (page 13 of spec). Regarding claims 4-5, given that the compositions are substantially similar the material taught by the reference should inherently have the same properties as the

Art Unit: 1775

claimed invention. Regarding claims 6-8, the fullerenes are extracted from and still contain some impurities of hydrocarbons and coal, which are inherently aromatic like fullerenes (background). Regarding claim 13-14, the matrix phase can be Graphite or Diamond (see above). Regarding claim 14-19, the composite can comprise reinforcing particles (spec page 14) such as Boron which would inherently be varied in size and exist within the milli- to nano- meter range. Regarding claim 38, the reference teaches dispersing a binder comprising fullerenes into a matrix phase and sintering under sufficient pressure and time to obtain a composite material (spec page 13). Regarding claims 39 and 48, the reference's disclosed method would inherently have sufficient pressure to disperse the carbon binder into the matrix phase and have between 1 and 99% binder (spec page 13-14). Regarding claims 40-47, (spec. pages 13-14). Regarding claims 49-50, the above taught sintering pressure and temperatures are inherently sufficient to create a reaction between the carbon phase and the matrix phase. The material is capable of being used as a coating.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20-28, 30-31 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/15548 in view of Nakano et al (U.S. 4,722,817).

Art Unit: 1775

7. WO '548, discussed above is silent as to the addition of fibers.
8. Nakano teaches a that SiC or carbon fiber reinforcement is advantageous to strengthen ceramic composite materials (column 1 line 37-55).
9. Therefore it would be obvious to use a fiber-reinforcing additive to reinforced the composite material taught by WO '548.
10. Regarding claims 22-27, the term wire is being interpreted to mean fiber since there is no support for "wire in claim 15. It would be obvious to optimize the fibers effectiveness at strengthening the composite by the use of routine experimentation of aligned or unaligned fibers of various configurations.
11. Regarding claim 28 and 30, WO 548 teaches that the material can be shaped into any configuration including a porous composite (page 14).
12. Regarding claims 34-36, a fiber-reinforced composite of WO '548 would inherently be a tricontinuous-strengthened composite composed of graphite or carbon (spec. page 13).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571) 272-1534. The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Miller



**JENNIFER MCNEIL**  
**PRIMARY EXAMINER**  
2/20/06